

of the application as amended is respectfully requested.

Claim 23 has been amended to recite the base as a requisite, as opposed to an optional, component of the invention as claimed, and to recite a Markush group from which the base may be selected in accordance with the disclosure in the specification at page 8, line 23-page 9, line 6, and original claim 5. New claims 71-79 have been added more completely to define the subject matter which Applicants regard as their invention in accordance with the disclosure in the specification at page 5, lines 10-27.

The Examiner had rejected claim 23 under 35 USC 112, second paragraph, as allegedly being indefinite because the recitation of optional components is allegedly inconsistent with the transitional language "consisting essentially of". Applicants respectfully disagree. As noted by the Examiner, this transitional language permits coverage of additional elements so long as they do not "materially" affect the "basic and novel" characteristics of the invention as claimed. A determination of what constitutes the basic and novel characteristics of the invention cannot be made in a vacuum, but must be made in connection with the description in the specification and how the invention as claimed distinguishes over the prior art.

In the present case, the specification shows that an ink composition minimally comprising at least an alkali-soluble colorant, a water-soluble organic solvent, water and a cationic, water-soluble resin of formula (I) can yield an improved image possessing good waterfastness and lightfastness without significant feathering or bleeding (see specification at page 3, line 4-page 4, line 2). The specification also shows that the other recited components (including the optional

components) do not detrimentally affect this outcome (see specification at page 10, line 3 to page 11, line 13 and the Examples). Moreover, as shown below, the claimed invention is patentable over the prior art without a consideration of the optional components. This being the case, it is respectfully submitted that there is no basis upon which it can be said that addition of the optional components would materially affect the basic and novel characteristics of the claimed ink, and indeed the Examiner has respectfully provided only a conclusory allegation in support of the rejection. In the absence of acceptable evidence or reasoning as to why the presence of the optional ingredients would materially affect the basic and novel characteristics of the ink composition without the optional components, it is respectfully submitted that the indication in the specification (to the effect that the optional components may be used consistent with the invention) must be taken as accurate (see *In re Marzocchi*, 169 USPQ 367, 370 (CCPA 1971)).

The Examiner has also rejected claims 23, 50, 52 and 69 under 35 USC 112, second paragraph, because the recitation that the recited resin having a repeating unit of formula (I) is "cationic" is allegedly indefinite. Applicants respectfully disagree. It is well known in the art that, generally, secondary or tertiary alkyl amines, such as are present in the compound of formula (I), are bases and become cations in a polar solvent. In a polar solvent, such as water in the claimed ink composition, the unshared pair of electrons of the nitrogen atom in formula (I) would be accepted by a hydrogen ion with formation of a covalent bond, and the nitrogen-containing group would thereby acquire a positive charge. Accordingly, the recited resin is in fact "cationic".

Certain of the claims have been rejected under 35 USC 102(b) as allegedly being

anticipated by Tomita et al (US 5,019,164), but the Examiner has indicated that she would reconsider this rejection if Applicants were further to define the base in a manner that avoided the reference. (The Examiner had suggested incorporating the limitations of claim 27 into claim 23.) The claimed bases are distinguishable from the bases described by Tomita et al '164 in that the polyamine compounds in Tomita have a molecular weight greater than 300 (see Tomita '164 at, for example, column 2, lines 54-59). The claimed bases are not polyamines as described in Tomita '164 and, as discussed in Applicants' Amendment of 26 March 2001, the claims are limited by the "consisting essentially of" transitional to exclude the mixture of two polyamines described in Tomita '164. Accordingly, Tomita '164 cannot be said to anticipate or to render obvious the invention as now claimed.

Certain other of the claims have been rejected under 35 USC 102 (b) as allegedly being anticipated by Tomita et al (US 5,017,224) or under 35 USC 103 (a) as allegedly being obvious over Tomita '224 in view of Taniguchi et al or over Stoffel et al in view of Tomita '224. Applicants respectfully traverse these rejections.

Tomita '224 describes an ink composition comprising polyamine resins that necessarily comprise between 3-20% primary amino groups in their molecular structure. Examples of repeating units that may be used together with the primary amino groups in the described polyamine resins include, but are not limited to, polyvinyl amine derivatives which encompass a species of the claimed repeating unit of formula (I). Nevertheless, there is nothing in the reference to show or suggest the selection of the claimed species for use in combination with the claimed base. Indeed, there is nothing in the reference that would show or suggest a preference

for the claimed species or that the claimed repeating unit of formula (I) would be preferable to, for example, a polyethyleneimine repeating unit or a non-substituted polyallylamine repeating unit. By contrast, the evidence of record in the Examples of the present specification shows that the claimed water-soluble resin containing the recited repeat units produce unexpectedly advantageous results as compared, for example, to a non-substituted polyallylamine or polyethyleneimine as described in the reference (see discussion in Applicants' Amendment dated October 25, 1999 at page 6, last paragraph-page 7, first two paragraphs). It is respectfully submitted that this evidence is sufficient to overcome any alleged *prima facie* case of obviousness set forth by the cited reference(s).

With particular respect to new claims 71-78, Applicants respectfully note that these claims have been drafted with the "consisting essentially of" transitional specifically to exclude primary amino groups as repeating units in the claimed cationic, water-soluble resin. These claims accordingly patentably distinguish over the cited references for this reason as well.

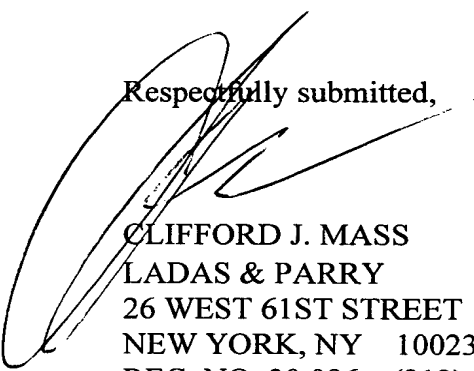
Certain of the claims have been rejected under 35 USC 102 (e) as allegedly being anticipated by Takizawa et al. Other of the claims have been rejected under 35 USC 103 (a) as allegedly being obvious over Takizawa et al either alone or in view of Taniguchi et al or Yatake or Tomita et al '224. Applicants respectfully traverse these rejections.

The primary reference cited in these rejections, Takizawa et al, requires an amphoteric polymer having both anionic and cationic groups. There is no requirement that the overall molecule be cationic and, indeed, the reference contemplates that the described polymers will

have either anionic or cationic characteristics depending on the pH of the ink. By contrast, the claims require that the recited water-soluble resin be cationic (not amphoteric) and thus distinguish over the cited reference and combination of references on this basis alone. Indeed, in teaching the desirability of an amphoteric polymer, the reference teaches away from a combination that would arrived at the claimed ink composition comprising a cationic, water-soluble resin.

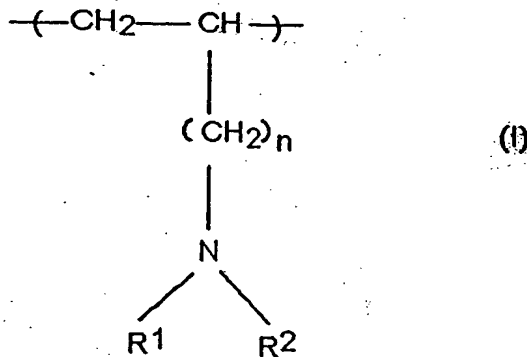
In view of the above, the claims as amended are believed patentably to distinguish over the cited art. Since all rejections and objections of record are believed to have been successfully traversed, the application is respectfully believed to be in allowable form. An early notice of allowability is earnestly solicited and is believed to be fully warranted.

Respectfully submitted,



CLIFFORD J. MASS  
LADAS & PARRY  
26 WEST 61ST STREET  
NEW YORK, NY 10023  
REG. NO. 30,086 (212) 708-1890

Claim 23. (amended) An ink composition consisting essentially of an alkali-soluble colorant, a water-soluble organic solvent, water, a cationic, water-soluble resin, a base and, optionally, one or more of ~~a base~~, a nonionic water-soluble resin and an assistant selected from the group consisting of a penetration accelerator, a viscosity modifier, a surface tension modifier, a hydrotropy agent, a humectant, a pH adjustor, an antimold, a chelating agent, a preservative and a rust preventive; the base being selected from the group consisting of a hydroxide of an alkali metal, a hydroxide of an alkaline earth metal, ammonia, mono-, di-, and tri-lower alkylamines, iminobispropylamine, 3-diethylaminopropylamine, dibutylaminopropylamine, methylaminopropylamine, dimethylaminopropanediamine, and methyliminobispropylamine, the cationic, water-soluble resin comprising a repeating unit represented by the following formula (I):



wherein  $\text{R}^1$  and  $\text{R}^2$  which may be the same or different represent a hydrogen atom or a  $\text{C}_{1-5}$  alkyl group, provided that  $\text{R}^1$  and  $\text{R}^2$  do not simultaneously represent a hydrogen atom; and

$n$  is 0, 1, or 2.